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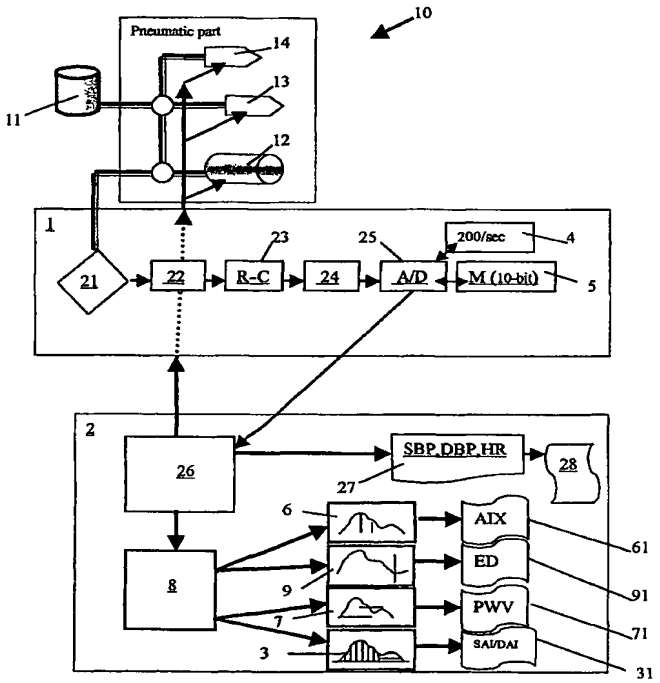
(54) Title: APPARATUS AND METHOD FOR MEASURING HEMODYNAMIC PARAMETERS



(57) **Abstract:** Apparatus (10) for measuring hemodynamic parameters, especially for Augmentation Index (AIx) and/or Ejection Duration (ED), by non-invasive, cuff based occlusive, blood pressure measurement, which apparatus comprises occlusive, oscillometric automatic blood pressure meter and units, determining the values of hemodynamic parameters, characterised by an oscillation wave separating and storing signal detector (1), the sampling rate thereof is at least 200/heart cycle; and has an storage unit (5) resolution thereof is organised at least 9 bit, an preferably digital, anti-filter (8) to compensate the distortions rising at the sampling, separating and digitising the oscillation wave, an amplitude arithmetic (6) unit establishing the Augmentation Index (AIx); an synthetic organ (9) unit establishing the Ejection Duration (ED). Method for non-invasive measurement of hemodynamic characteristics, especially AN and/or ED, with an occlusive, pressure-sensor cuff, placed on the brachial artery, and with the apparatus (10) according to the invention by sampling, analysing, and evaluation of the signal flow of the oscillations of the pulse waves, characterised by that a usual stepwise blood pressure measurement is performed, and the SBP, DBP and HR values are stored, thereafter the signal distortions appeared at the sampling are compensated by an "anti-filter" process, after it the cuff is set over the systolic pressure, i.e. to supra-systolic pressure range, preferably SBP + 35 mmHg pressure, and from the received oscillation curves, on the basis of the wave amplitudes, we calculate the AIx; and on the oscillation curve determining the minimum point after the first reflex wave, we calculate the ED value.

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